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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,953	04/21/2004	Laughlin Gerard McCullough	2003U013.US	7140

7590 01/07/2005

Univation Technologies, LLC  
Suite 1950  
5555 San Felipe  
Houston, TX 77056

EXAMINER
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LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 01/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/828,953

Applicant(s)

MCCULLOUGH, LAUGHLIN  
GERARD

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-22 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

This office action follows a response filed on October 14, 2004. Applicants have amended claims 1 and 12. Claims 1-22 are pending.

***Claim Rejections - 35 USC § 102 / 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. 2001/0034298 to Isobe *et al.*

The prior art of Isobe *et al.* teaches a catalyst and a process for polymerization using said catalyst wherein the catalyst is comprised of a metallocene, an activator, and an ion-exchangeable layered inorganic compound as the support/carrier (see claim 1 and abstract). In particular, use of the compounds 2-methyltetrahydroindenyl(Cp)ZrCl<sub>2</sub> (where Cp = cyclopentadienyl), 2-ethyltetrahydroindenyl(Cp)ZrCl<sub>2</sub>, 4-methyltetrahydroindenyl(Cp)ZrCl<sub>2</sub>, 2,4-dimethyltetrahydroindenyl(Cp)ZrCl<sub>2</sub>, and 2-methyl-4-phenyltetrahydroindenyl(Cp)ZrCl<sub>2</sub> is prescribed clearly on page 4, entries (11) and (13)-(16). These compounds possess the requisite structural features recited in present claims 1, 3-5, 12, and 14-17, and the catalyst system also meets the parameters set forth in the claims. Polymerization may be carried out in the absence of solvent at a temperature of up to 250 °C (*i.e.*, gas phase) (paragraph [0165]). Olefins usable in the polymerization include ethylene and C<sub>3</sub>-C<sub>8</sub> α-olefins, and copolymerization of ethylene and α-olefin is well within the scope of the invention (paragraph [0163] and examples).

The reference does not illustrate copolymerization of ethylene and 1-hexene in the examples, and therefore, the reference is silent with regard to the properties of such a resulting copolymer. It is noted that the claims recite conditional parameters. Since the catalyst and method of polymerization shown in Isobe *et al.* is essentially the same as that recited in the present claims, then a reasonable basis exists to believe that when the comonomer is 1-hexene, and the C<sub>6</sub>/C<sub>2</sub> mole ratio were varied accordingly, the resulting polymer would possess the properties recited in the claims. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

### ***Response to Arguments***

3. The rejection of claims 1-22 under 35 U.S.C. 102(b) / 35 U.S.C. 103(a) over U.S. Patent No. 6,180,736 to Muhle *et al.* has been overcome by amendment. The reference does not teach use of substituted tetrahydroindenyl ligands. In fact, the general teaching is directed toward use of metallocenes containing unsubstituted tetrahydroindenyl ligands.

Claim objections have been withdrawn in light of Applicant's explanation of terminology.

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*Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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January 5, 2005



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